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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 09/581,007  | 07/24/2000  | GEORG LOHR           | 1384.1036            | 2196             |
| 7590  | 03/17/2005  |                      | EXAMINER             |                  |
| ST.ONGE STEWART JOHNSTON & REENS LLC<br>986 BEDFORD STREET<br>STAMFORD, CT 06905-5619 |             |                      | GHULAMALI, QUTBUDDIN |                  |
|   |             |                      | ART UNIT             | PAPER NUMBER     |
|   |             |                      | 2637                 |                  |

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/581,007             | LOHR, GEORG         |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Qutub Ghulamali        | 2637                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 17 November 2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 41-84 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 41-84 is/are rejected.  
 7) Claim(s) 57, 75 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1.) Certified copies of the priority documents have been received.  
 2.) Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3.) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 41, 42, and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Faroudja (US Patent 4,831,463).

Regarding claims 41 and 59, Faroudja discloses a system for low-interference transmission of a signal, comprising:  
a transmitter (storage or transmission path) for generating an output signal to be transmitted via a transmission circuit, the signal having substantially a line spectrum (col. 2, lines 27-48; col. 4, lines 41-51);

a modulator unit (fig. 6a, element 50) associated with the transmitter for modulating the output signal to be transmitted, or a carrier signal of transmitting means in the transmitter, or the output signal at any site in the transmission circuit, independently of a modulation technique selected for the purpose of signal transmission (col. 4, lines 52-66);

a receiver, spatially separated from the transmitter, for receiving a modulated transmitted signal via the transmission circuit (col. 7, lines 57-59), wherein the modulator unit modulates the signal so that spectral lines of the out-put signal are broadened to fill gaps between individual spectral

lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased (abstract; col. 2, lines 27-47; col. 6, lines 60-67; col. 16, lines 50-65).

Regarding claim 42, Faroudja discloses the modulator unit modulates the output signal to be transmitted, or a carrier signal of transmitting means in the transmitter, or the output signal at any site along the transmission circuit, independently of a transmission cycle (col. 10, lines 24-35).

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 43-56, 58, 60-74, 76-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faroudja (US Patent 4,831,463) in view of Fullerton et al (US Patent 5,995,534).

Regarding claims 43 and 61, Faroudja discloses all limitations of claims 41 and 59. Faroudja, although discloses the filter output is controlled for alignment prior to modulator input (col. 9, lines 63-67; col. 10, lines 10-15), Faroudja however, does not explicitly disclose a controller serve to control the modulator unit. In a similar field of endeavor Fullerton discloses (fig. 10) a controller (1002) serves to control the modulator (1008) (see col. 13, lines 20-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to

use the controller to control modulation as taught by Fullerton in the system of Faroudja so as to provide adequate code time modulation.

Regarding claims 44 and 62, Faroudja discloses the transmitter comprises a clock generator (fig. 7a, element 143).

Regarding claims 45 and 63, Faroudja discloses the modulator unit controls the clock generator appropriately for broadening the spectral lines (col. 11, lines 52-60; col. 12, lines 3-9).

Regarding claim 46 and 64, Faroudja discloses the modulator unit subjects a cycle frequency of the clock generator to frequency modulation (col. 1, lines 30-36).

Regarding claims 47 and 65, Faroudja discloses all limitations of claims 46 and 64, but is silent regarding a VCO as a frequency, determining element. Fullerton in a similar field of endeavor discloses a VCO as a frequency, determining element (col. 13, lines 34-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a VCO as a frequency determining element as taught by Fullerton in the system of Faroudja because it provide high timing accuracy desired for stable transmission.

Regarding claims 48 and 66, Faroudja discloses all limitations of claims 47 and 65, but is silent regarding control unit adjusts the VCO. Fullerton in a similar field of endeavor discloses a control unit adjusts the VCO (col. 3, lines 55-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a control to adjust the VCO as taught by Fullerton in the system of Faroudja because it can provide adjustments to possible frequency drift in the VCO.

With regards to claims 49, 50, 67 and 68, Faroudja discloses all limitations of claims 41 and 59, but is silent regarding modulator unit subject the signal to be transmitted to frequency,

phase or amplitude modulation. Fullerton in a similar field of endeavor discloses the modulator generates a signal that is to be modulated by the information signal by frequency modulation (FM) techniques, amplitude modulation (AM), phase modulation (FM), frequency shift keying (FSK, phase shift keying (PSK), or the like (col. 3, lines 60-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to subject the signal to be transmitted to frequency, phase or amplitude modulation as taught by Fullerton in the system of Faroudja because it lead to greater flexibility with the transmission of information over the communications medium.

With regards to claims 51 and 69, Faroudja discloses the output signal as pulsed and the modulator unit shifts or delays individual signal edges towards earlier or later points on time in propagation to a signal defined by an additionally provided modulation signal generator (col. 2, lines 54-60).

With regards to claims 52 and 70, Faroudja discloses modulator unit comprise of delay control means for analyzing the transmitter output signal and controlling a delay which causes a shift or delay (col. 8, lines 61-65).

Regarding claims 53, 54, 71 and 72, Faroudja discloses all limitations of claims 41 and 59. Faroudja, however, is silent regarding the transmitter and the delay control means comprises a PLL means, and the delay circuit comprises a flip-flop circuit. In a similar field of endeavor, Fullerton discloses the radio transmitter comprise of a PLL means with a ROM that stores information samples with shifting of binary data, indicating a flip-flop arrangement (col. 19, lines 50-57; col. 21, lines 1-17, 58-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a PLL means and delay circuit comprises a flip-

flop circuit as taught by Fullerton in the system of Faroudja because it can provide temporary storing and shifting of information in and out during lock operation for greater flexibility with the transmission of information over the communications medium.

Regarding claims 55 and 73, Faroudja discloses all limitations of claims 54 and 72. Faroudja, however, is silent regarding a variation of modulation by the modulator unit is covered by a control range of the PLL means of the transmitter. Fullerton, in a similar field of endeavor discloses a variation of modulation by the modulator unit, is covered by a control range of the PLL means of the transmitter (col. 27, lines 36-43; col. 28, lines 35-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a control range for the modulation variation as taught by Fullerton in the system of Faroudja because it can cause the lock loop to drift at a programmed rate, faster or slower than the remote transmitter's transmit period.

Regarding claims 56 and 74, Faroudja discloses all limitations of claims 41 and 59. Faroudja, however, is silent regarding data coding by means of pseudo random noise is performed in addition to a modulation by the modulator. Fullerton in a similar field of endeavor discloses data coding by means of pseudo random noise is performed in addition to a modulation by the modulator (col. 1, lines 35-50). It would be quite obvious to one of ordinary skill in the art at the time the invention was made to use a communication wherein data coding would have the PN modulation performed as taught by Fullerton in the system of Faroudja so that it can provide necessary energy spreading in an inherently wide bandwidth.

Regarding claims 58 and 76, Faroudja discloses all limitations of claims 41 and 59. Faroudja, however, is silent regarding additional transmission circuit for a transmission of a

synchronization signal for controlling the modulation of the transmitter and the receiver. Fullerton in a similar field of endeavor discloses radio communication system wherein subcarriers of different frequencies or waveforms can be used to add channelization of impulse radio signals between the transmitter and receiver (abstract; col. 2, lines 48-54). It would be quite obvious to one of ordinary skill in the art at the time the invention was made to use additional transmission circuit for a transmission of a synchronization signal for controlling the modulation of the transmitter and the receiver as taught by Fullerton in the system of Faroudja because it can provide transmission of synchronization signals for improved multipath fading.

With regards to claim 77, Faroudja discloses communication system wherein the transmission circuit is selected from the group consisting of a line-bound transmission circuit (a preprocessor includes a preprocessor comb filter for comb filter for processing of the incoming scanning lines to assure the presence of spectral gaps between energy groups in the spectrum) (abstract).

With regards to claim 78, Faroudja discloses the signal comprises a digital signal (col. 11, lines 42-44).

Regarding claim 79, Faroudja discloses a system for transmitting digital signals, comprising:

- a first stationary part (col. 66-67; col. 8, lines 1-3);
- a second movable part (col. 8, lines 1-15);
- a transmitter for generating a transmitter output signal that includes a carrier signal and the data signal (col. 2, lines 27-48; col. 4, lines 41-51);
- a receiver for receiving the transmitter output signal (col. 4, lines 46-51),

a transmission circuit coupling said transmitter to said receiver and for transmitting the transmitter output signal between said first stationary part and said second movable part (col. 4, lines 45-51);

a modulator coupled (fig. 6a, element 50) to said transmission circuit for generating a modulation signal (col. 4, lines 52-66);

a modulation unit wherein the modulator unit modulates the signal so that spectral lines of the out-put signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased (abstract; col. 2, lines 27-47; col. 6, lines 60-67; col. 16, lines 50-65).

Faroudja, however, does not explicitly disclose a controller coupled to serve to control the modulator unit. In a similar field of endeavor Fullerton discloses (fig. 10) a controller (1002) serves to control the modulator (1008) (see col. 13, lines 20-50) said modulator to generate the modulation signal and to apply the modulated at any site along the transmission circuit to modulate the output signal so that the spectrum is distributed and a mean spectral power density is reduced. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the controller to control modulation as taught by Fullerton in the system of Faroudja because it can reduce the power within the spread spectrum by distribution of the energies.

With regards to claim 80, Faroudja discloses communication system wherein the transmission circuit is selected from the group consisting of a line-bound transmission circuit (a preprocessor includes a preprocessor comb filter for comb filter for processing of the incoming

scanning lines to assure the presence of spectral gaps between energy groups in the spectrum) (abstract).

Regarding claims 81 and 83, Faroudja discloses that the transmitter and the receiver can be mobile relative to each other (col. 7, lines 65-67; col. 8, lines 1-15).

Regarding claims 82 and 84, Faroudja discloses the transmitter is a rotating data transmission device (col. 10, lines 42-49).

***Allowable Subject Matter***

5. Claims 57 and 75 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

Dent (US 6,243,587) discloses method and system for locating position of a mobile transmitter. Schuchman et al (US 5,283,780) shows a digital broadcasting system with frequency diversity and adaptive equalization.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

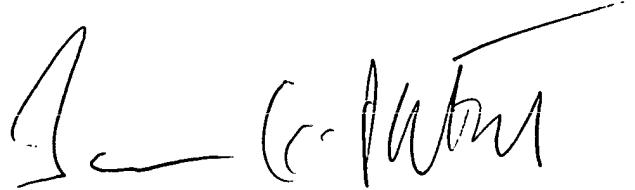
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QG.

March 8, 2005.



JAY K. PATEL  
SUPERVISORY PATENT EXAMINER